

L Numb r	Hits	Search Text	DB	Tim stamp
1	3	web same quality same is adj h le	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 12:28
2	3	quality same iso adj hole and web	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 12:29
3	1	quality same iso adj hole same splice	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 12:30
4	6	iso adj hole	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 12:34
5	1	0926552.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 12:35
7	0	00926552.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 12:35
8	3	926552.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 12:35
9	646	web same mark\$3 same quality	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 12:36
10	114	web same mark\$3 same quality same speed	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 12:39
11	3	(web same mark\$3 same quality same speed) sam co rdinat	USPAT; US-PGPUB; EPO; JP ; DERWENT; IBM_TDB	2003/05/24 12:37

12	6	(web same mark\$3 sam quality same speed) and c rdinat	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 12:38
13	2	web same mark\$3 sam quality sam sp ed same synchroniz\$4	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 13:41
14	0	index adj hole same quality same (speed velocity)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 13:41
15	13	index adj hole same quality	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 13:42
16	3	(index adj hole same quality) same web	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/05/24 13:42

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TITLE: Procedure for monitoring printing quality

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US-CL-CURRENT: 382/112, 101/248 , 356/429 , 382/287

ABSTRACT:

The invention concerns a procedure for controlling the **quality** of printing, wherein measuring **marks** (11, 12, 13 and 14) are placed on the printing base, such as a paper **web**, beside and/or among the actual printing

are employed. A lighting unit (1) and an electronic camera (2) trained on the paper web (3) and the operation of the camera at least is synchronized with the transport speed in the printing process. With the camera (2) an image is recorded from a measuring area (9) on the paper web (3), which area contains measuring marks (11, 12, 13 and 14). The image is stored in an image memory (5). The image is taken from the image memory (5) to be processed, whereat the measuring marks are identified and located therein and on their basis the printing quality is checked.

5 Claims, 3 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 1

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Abstract Text - ABTX (1):

The invention concerns a procedure for controlling the quality of printing, wherein measuring marks (11, 12, 13 and 14) are placed on the printing base, such as a paper web, beside and/or among the actual printing

are employed. A lighting unit (1) and an electronic camera (2) trained on the paper web (3) and the operation of the camera at least is synchronized with the transport speed in the printing process. With the camera (2) an image is recorded from a measuring area (9) on the paper web (3), which area contains measuring marks (11, 12, 13 and 14). The image is stored in an image memory (5). The image is taken from the image memory (5) to be processed, whereat the measuring marks are identified and located therein and on their basis the printing quality is checked.

Detailed Description Text - DETX (4):

The apparatus applying the procedure of the invention, described in the foregoing, operates in principle as follows. The lighting means 1 and the electronic camera 2 have been trained on the paper web 3. The operation of camera 2 and lighting means 1 is synchronized with the printing transport speed with the aid of the synchronizing means 7 and, possibly, of the data processing unit 4. An arrested image is recorded from the measuring area 9 with the camera 2 and stored in the image memory 5 provided in connection with the data

processing unit 4. With the aid of a suitable configuration-identifying programme, stored in the data processing unit 4, the measuring marks 11, 12, 13 and 14 are located within the image recording area 9. Subsequently, the image processing, or measurement, is confined to a small area 10 at the mark sites.

The register marks relating to the different colours are identified with the aid of said configuration-identifying programme and a check for successful register is made for each colour. At the same time the density is determined from the image recorded with the camera 2, with the aid of the same measuring marks, after the register has been ascertained. The enlarged image area 10 can be visually observed all the time, with the monitor 6. If any deviation from normal printing quality is noted, alarm is actuated over the alarm unit 8 and requisite recordings are made with the unit 17.